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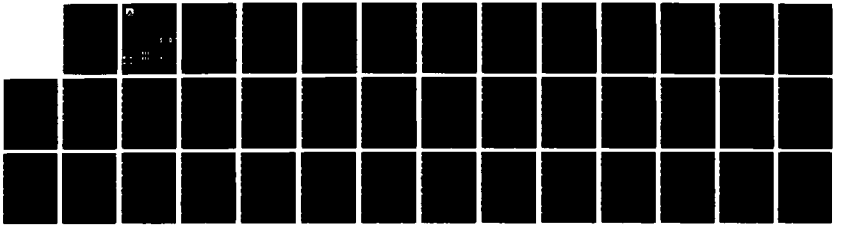

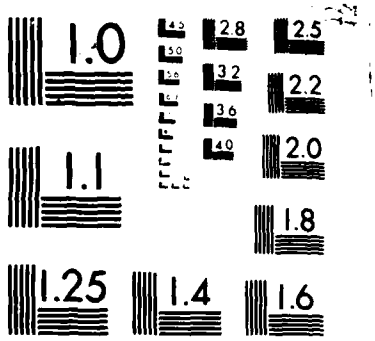

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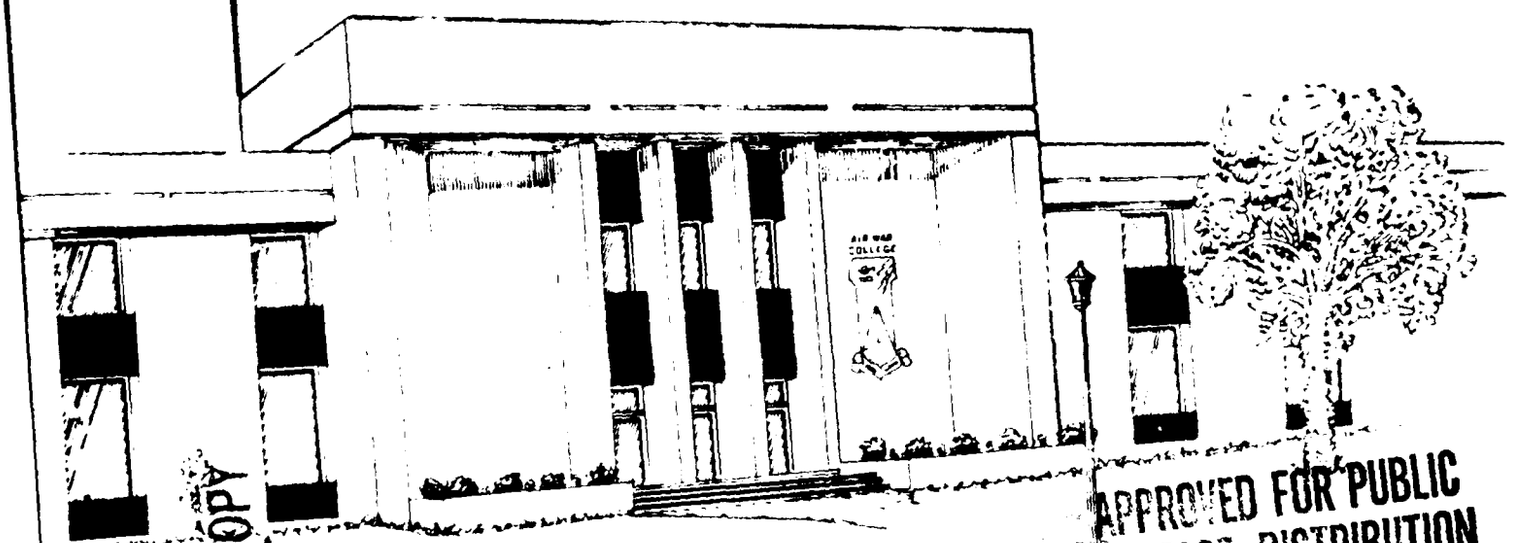
AIR WAR COLLEGE

RESEARCH REPORT

No. AU-AWC-86-113

THE EXPORT FIGHTER PROGRAM--=HOW TO MAKE A SOUND CONCEPT WORK IN THE FUTURE

By COLONEL JOHN J. KELLY, JR.



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THE EXPORT FIGHTER PROGRAM--

HOW TO MAKE A SOUND CONCEPT WORK IN THE FUTURE

by

John J. Kelly, Jr.
Colonel, USAF

A RESEARCH REPORT SUBMITTED TO THE FACULTY

IN

FULFILLMENT OF THE RESEARCH

REQUIREMENT

Research Advisor: Colonel James C. Poole, Jr.

MAXWELL AIR FORCE BASE, ALABAMA

MAY 1986

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DISCLAIMER-ABSTAINER

This research report represents the views of the author and does not necessarily reflect the official opinion of the Air War College or the Department of the Air Force.

AIR WAR COLLEGE RESEARCH REPORT ABSTRACT

TITLE: F-X: HOW TO MAKE A SOUND CONCEPT WORK IN THE FUTURE

AUTHOR: JOHN J. KELLY, JR., COLONEL, USAF

An assessment of the export fighter, or F-X, program. Provides an overview of the policy considerations involved in formulating the F-X program under the Carter Administration. Describes actions taken by the U.S. defense industry in response to this program and actions taken during the Reagan Administration which caused the program to stall. Reviews the basic factors which caused the program to fail and offers a set of recommendations on how a program structured primarily for the export market could succeed in the future. Recommendations include marketing initiatives, tax incentives for industry, a restatement of security assistance policy and the development of regional consortiums for coproduction.

BIOGRAPHICAL SKETCH

Colonel John J. Kelly, Jr. has a diverse background in the management of U.S. Security Assistance Programs. He has served as the System Program Director for the $3.2 billion Saudi E-3A AWACs Program, the largest Foreign Military Sale in U.S. history. He has also served in the U.S. Military Training Mission to Saudi Arabia which administers all Saudi FMS programs and in the Directorate of Plans at HQ USAF with primary responsibilities for political military affairs and security assistance policy. Colonel Kelly has served operational assignments in airlift units and is a distinguished graduate of the U.S. Army Command and General Staff College and also a graduate of the 1986 class of the Air War College. Colonel Kelly was commissioned from the United States Air Force Academy in 1965 with a Bachelor of Science degree in Engineering Sciences. He has also earned an MSEE from the Air Force Institute of Technology and an MBA from George Washington University.

I. INTRODUCTION

This paper will present an analysis of the export fighter program, or F-X program; a program which was originally designed as an innovative approach to U.S. security assistance efforts, but which failed to meet the many challenges confronting it.

The analysis will first provide a historical review of the program by first outlining the Carter administration's conventional arms transfer policy which provided the conceptual framework for the F-X program. It will then review how the program subsequently evolved under the current Reagan administration.

The analysis will then offer some insights into why the program failed and offer a set of recommendations on how a major weapons systems program designed primarily for the export market, such as the F-X, should be developed to make a meaningful contribution to our security assistance program.

II. HISTORICAL EVOLUTION OF THE PROGRAM

Shortly after his inauguration, President Carter, prompted by a perception of an unrestrained and potentially destablizing proliferation of conventional weapons transfers throughout the world, directed a comprehensive review of the U.S. conventional arms transfer policy. Based on this review, in May 1977, the President directed that, henceforth, arms transfers would be viewed as an exceptional foreign policy instrument, to be used

only "in instances where it can be clearly demonstrated that the transfer contributes to our national security interests." (1:1) This was a significant departure from previous policy and included several significant controls or constraints, some of which would have direct impact on the concept and evolution of the export fighter program:

- The U.S. would not be the first supplier to introduce into a region newly developed, advanced weapons which would create a new or improved capability.
- No new weapons would be sold to, or coproduced by allies until these weapons were operationally deployed with U.S. military forces.
- Development or significant modification of advanced weapons solely for export was barred.
- Coproduction agreements for major weapons systems were prohibited, beyond assembly of subcomponents and/or high usage spare parts.

During this period, the Northrop Corporation was analyzing future fighter aircraft requirements for U.S. friends and allies and defining a marketing strategy for the 1980's and 1990's. The highly successful Northrop T-38 design was the basis for the F-5A fighter that was developed for U.S. and allies' use in the 1960's to counter the Soviet designed MIG 15, 17, and 19. This F-5 fighter was further refined and improved and evolved as the F-5E fighter, first produced in the early 1970's to counter the MIG 21. Approximately 2300 total F-5 series fighters have been produced by Northrop or its overseas licensees in 28 different nations as part of this highly successful program. (2:38)

The F-5 program was successful because the relatively high performance aircraft was highly reliable, relatively inexpensive to maintain, and an extensive logistics support system existed in the U.S. to support these aircraft. This logistics base was originally developed to support the large number of T-38 aircraft and modest number of F-5 aircraft incorporated into the USAF force structure. The low logistics support cost was important to the less technically advanced nations such as Korea and Morocco which also operate with modest defense budgets.

In 1977, Northrop estimated that over the next 15 years a future worldwide market of 2500 to 3000 aircraft existed for a new aircraft which could counter the Soviet MIG-21 and MIG-23 aircraft being transferred by the USSR to its clients and surrogates. (3:1281)

Although Northrop was eager to exploit this potential market, it faced 3 constraints imposed by the Carter policy: the U.S. would not introduce newly developed weapons; development or significant modifications solely for export was barred; no new weapons were to be sold to allies until they were operationally deployed with U.S. Forces.

Northrop's response to satisfy the Carter policy, yet compete for this potential global market, was the development of the F-5G aircraft. The research and development effort for this fighter was financed entirely with company funds and with

no government assistance, a significant first in the U.S. defense industry. (8:28) This aircraft, while retaining a somewhat similar physical and aerodynamic appearance as the F-5A and F-5E is, for all intents and purposes, a new aircraft. (2:40) Although many common parts exist, the F-5G incorporates a new engine, new avionics, and provides greatly improved performance and defensive air-to-air weapons capability. However, designating the aircraft as a modified model in the existing F-5 series rather than designating the aircraft as a new model (e.g. an F-17) attempted to avoid the restrictions imposed by the Carter policy applicable to the export of new (as opposed to modified) weapons systems. The F-5G could be marketed as a normal product improvement over their existing F-5 aircraft previously exported. The fact that the F-5G retains somewhat similar physical characteristics would strengthen Northrop's argument. This designation strategy would eventually work to Northrop's disadvantage and will be discussed later.

As Northrop continued this F-5G development program through the late 70's, the USAF and U.S. Navy (USN) modernized their force structures as the F-14, F-15, and F-16 entered the inventory. (4:III-42,43) These aircraft possessed capabilities well beyond the F-5G or any aircraft then in the Soviet inventory. Additionally, they incorporated technically sensitive hardware, had high unit costs and required sophisticated maintenance skills. The advanced capability of these aircraft also resulted

in a policy dilemma--allies and friendly nations appreciated the capabilities and prestige of these aircraft, and requested the U.S. government to sell these first line fighters to counter the delivery of advanced fighters to their Soviet-client neighbors. In the late 70's, Iran was sold F-14's, Israel F-15's and F-16's, Japan F-15's and Venezuela, Greece, Egypt, Spain, Sweden and Turkey were granted export licenses for the F-16's. (5:15; 6:13: 10:25)

These requests and subsequent sales were approved in spite of their apparent contradiction with the Carter arms transfer policy due to our overarching desire to be forthcoming to our friends and allies, satisfy their legitimate defense needs, prevent them from turning to other suppliers such as France, and in the case of Egypt and Israel, in an effort to satisfy the Camp David accords. However, the sales resulted in the transfer of advanced and expensive technology, strained our allies' support capabilities, and diverted aircraft from the U.S. force modernization program. In an attempt to assuage these problems, the Carter Administration, in January, 1980, announced that the sale to foreign countries of intermediate fighter aircraft developed or modified <u>for export</u> (emphasis added) would be consistent with the objectives of the Administration's arms transfer policy. (7:1) This policy, known as the export fighter (F-X) policy, was a distinct departure from the Administration's previous arms transfer policy in that it allowed development of weapons solely for export.

The policy defined the export fighter, F-X, only in a generic sense--by using the term "intermediate" export fighter--it would have cost and performance characteristics between the F-5E and front line U.S. fighters. Its primary mission would be defensive--the protection of the recipient country from air attack in the late 1980's and 1990's. Additionally, it would be limited in range to minimize its offensive capability; have lower cost and better maintainability than first-line fighter aircraft; not require a U.S. government guaranteed minimum market and could not be easily upgraded without U.S. approval. (7:2)

The Administration believed this policy change was necessary to provide consistency with the overriding purposes of the President's arms transfer policy--to provide countries with weapons best suited for their self defense. The policy would also help the U.S. to respond to requests for new fighter aircraft when the older F-5E became inadequate and would contribute to arms transfer restraint by discouraging purchase of more advanced fighters, such as the F-15 or F-16 from the U.S. or other suppliers. This policy was also a tacit recognition of reality and a correct interpretation of the needs of the foreign defense marketplace--an interpretation parallel to the one made by Northrop three years earlier when the F-5G program began. As a result, the F-5G, still in development, satisfied all criteria established by this F-X policy. Also, as a response

to this policy, the General Dynamics Corporation (GD) developed an F-X candidate aircraft, the F-16/79 which was a variant of GD's F-16 aircraft. The contractor replaced the F-16's high technology F-100 type engine with the older J-79 type engine used in the F-4. This modification of the F-16 with an older, but heavier and less powerful engine already approved for export, immediately insured that the F-16/79 would have capabilities less than the F-16, as required by the F-X policy. (9:38)

With two viable F-X candidate aircraft, the State Department, by June 1980, authorized GD and Northrop to make presentations to 15 nations (Austria, Taiwan, Portugal, Pakistan, Phillipines, Thailand, Singapore, Indonesia, Brazil, Venezuela, Switzerland, Jordan and Malysia, and India (F-16/79 only)). (10:25) Appendix I compares the performance of both F-X candidates with the F-5E at the low end of the capability spectrum and with the F-16 at the upper end. The Department of Defense (DOD) was designated the Executive Agent to provide program planning and management and oversee the contractors' development programs. (11:1) In March, 1981, the Secretary of Defense announced that he advised the President that he intended to evaluate both the F-5G and F-16/79 to determine which aircraft best satisfied the security assistance needs of allies for the next 15 years. (12:1) Also, the Secretary of the Air Force was designated the Source Selection Authority and was directed to make all arrangements to award a contract by October 1, 1981.

for 20 F-X aircraft. This initial buy, which would be made in anticipation of foreign sales, was then planned to be funded by the Special Defense Acquisition Fund (SDAF). (12:1,2) The SDAF was established and normally used to satisfy allies' short notice requests for weapons as part of the security assistance program.

These decisions to establish F-X program management responsibilities were made during the transition period following President Carter's election defeat and during the early days of the Reagan administration. On July 8, 1981, the Reagan administration announced its arms transfer policy which was a significant departure from the previous administration's. The Reagan Administration realized that "the U.S. could not defend the free world's interests alone but must be prepared to help its friends and allies strengthen their capability through the transfer of conventional arms and other forms of security assistance". (14:48) No longer would arms transfer be viewed as a unique exception to policy as under the Carter Administration; and the new administration would pragmatically and flexibly tailor its approach to arms transfer requests to respond promptly to the dynamic global environment. (14:48)

While this policy promised a more lenient arms transfer policy, it immediately jeopardized the raison d'etre for the F-X program. The F-X program was conceived because of a reluctance to transfer first line fighters. Now that a willingness was

signalled to be more forthcoming with normal arms transfer programs, the requirement for a program that was designed as an exception to policy could become obviated due to the policy change.

Perhaps the first signal that the F-X program was losing its global appeal came with the sale of 40 F-16's to Pakistan in the Fall of 1981. The sale of F-5E's to Pakistan was blocked during the Carter Administration due to U.S. displeasure with the Pakistani nuclear program; however, Deputy Secretary of State Buckley, during a trip to Pakistan, offered these front-line fighters in an effort to shore up a potential U.S. ally on Afghanistan's border following the Soviet invasion of Afghanistan. Rep. Zablocki, (D, Wisc) Chairman of the House Foreign Affairs Committee, immediately noticed the potential impact of this F-16 sale on the F-X program and, in November 1981, stated that the sale of F-16's to Pakistan was an exception to the rule due to the "extraordinary threat" posed on its borders. The F-16 should be reserved for the U.S. and NATO only, he contended, with the F-X being the export fighter of the 1980's. (15:1)

However, there were also additional developments which negated the intent of the original Carter policy and sapped the vitality of the F-X program. These key developments were:

A. The Reagan Administration, in an attempt to improve relations with the Peoples' Republic of China, refused to

sell the F-5G to Taiwan. Instead, the U.S. offered to extend the current F-5E coproduction agreement with Taiwan. (16:16) Northrop initially began its F-5G development program with the expectation that Taiwan would place a firm order for about 150 F-5G aircraft (29:18) with first delivery by July 1984. (3:1281) The F-5G would have eventually replaced over 250 F-5A and F-5E aircraft in Taiwan. (16:16) When this decision was announced, a representative of the Israeli aircraft industries said that Israel would probably renew efforts to sell its Kfir C-2 aircraft to Taiwan. Ironically, Israel holds an export license from the U.S. to sell this aircraft to Taiwan. The license is required because the Israeli-built aircraft used the U.S. J-79 engine. (16:16)

B. In April, 1982, Jordan turned down the F-5G fighter, preferring to buy the first line F-16. "We have to look for quality rather than quantity. We do not know if the F-5G is sufficient for our needs", stated an official of the Jordanian embassy in Washington. (18:16) The sale of F-16's to Jordan has encountered stiff Congressional opposition because of the perceived resultant threat to Israel, and as a result, Jordan may be forced to accept the Northrop aircraft, or turn away from the U.S. for its aircraft needs.

C. Venezuela, after flight testing the F-16/79 (19:34), requested approval to purchase the F-16 instead.

D. Of the 42 countries approved for marketing presentations and export of the F-X, not one country has placed a firm order for either version. Meanwhile, Northrop's development costs are now in the vicinity of $1 billion, and South Korea, Pakistan, and Thailand have received approval to purchase the F-16. (36:6)

Faced with these large costs, Northrop offered to sell the U.S. Air Force the F-5G aircraft, now redesignated the F-20, for $15 million each, as contrasted to the $19 million unit cost for the F-16. The redesignation of the aircraft was also a step to give the aircraft its own identity and remove the stigma it had acquired in customer's eyes as only an upgraded version of the venerable F-5 series.

This Northrop offer to the Air Force, coupled with Congressional support for Northrop has led to a funded competition between the Northrop F-20 and the GD F-16 to select a new air defense fighter for USAF use. Should Northrop win this competition, its international marketing position would be greatly advanced because it would now be advertising an aircraft that had been judged sufficiently advanced to be incorporated into the U.S. force structure. Should Northrop lose this competition, the F-20 program would probably be no longer viable, and, with

GD showing no recent interest in marketing the F-16/79 at the possible expense of the F-16, the F-X program would probably atrophy and fall victim to changed policies. After the U.S. Government announced the F-X policy and encouraged the U.S. defense industry to support this program, both GD and Northrop developed and marketed their candidates at their own expense. In the future it will be difficult, if not impossible, to convince industry to assume an entrepreneural spirit and develop weapons systems at their own expense in response to a government policy which may fall victim over the short term to similar exigencies. This program will be an example where all parties lose.

III. REASONS FOR THE DEMISE OF THE F-X PROGRAM

This section will summarize the major reasons why an export fighter was not introduced into allied and friendly nations' air forces. It is important to review the reasons why this program floundered both to avoid these mistakes in the future and as a basis for developing a set of recommendations on how to best formulate a major weapons program which is designed primarily for the export market.

The first problem the program encounted was a change in policy due to changes in administrations and the global situation.

If a weapon system such as the F-X is to be developed for export only and totally at contractor expense, the contractor(s)

must make a major long term capital budgetary decision and investment. This long term investment has thus far been totally unprofitable because the policy on which the investment was based was overturned.

Second, foreign nations will not consider an aircraft first-rate or frontline unless it is part of the U.S. force structure. There are no F-X aircraft in our force structure, nor is there any firm future date to include them in the force structure. (4:iii-42) Therefore, foreign nations perceive the F-X as a second-rate fighter, not an intermediate fighter. This is an important factor in many nations where the quality of aircraft is a source of prestige, as the statement by the Jordanian official quoted earlier shows.

Third, the Northrop F-5G entry has suffered from its designation. Although essentially a new fighter, it has been perceived by foreign nations as being only an updated version of the old F-5E. This was precisely the impression Northrop originally wished to create with Carter Administration officials in order not to be bound by the restrictive provisions of the Carter arms export policy. This Northrop strategy has, I believe, backfired.

Fourth, after a country tested or received information on an aircraft such as the F-16/79, their appetite was whetted for the first line F-16. The F-16/79 is the security assistance version of the retailer's "bait and switch" tactic. You get

and Jordan are two specific examples referenced earlier. Although no direct concrete evidence exists and GD officials will not admit this intent, the marketing creation of F-16/79, and also the designation itself, have in reality served only as a stalking horse for the F-16, and helped destroy the credibility of an export fighter program.

Fifth, the U.S. Government lost credibility in sponsoring the F-X when nations saw the U.S. make repeated exceptions of policy and approve the sale of F-15, F-16, or F-18 to their neighbors as was done for the many nations listed earlier. A nation then believes it must request a front line fighter, in lieu of F-X, to see if it is as vital an ally to the U.S. as are other states who have already purchased the F-15 or F-16. For example, because Pakistan received F-16's, should not Jordan also request the same aircraft, believing themselves to be as closely allied to Washington as Pakistan is?

Finally, because industry funds were used exclusively in the F-X program, the program never received the government emphasis of previous fighter programs (such as F-4 and F-16) to encourage foreign sales as a means of lowering unit costs and promoting commonality of U.S. equipment abroad. (20:23)

These problems combined to make the F-X program an expensive policy lesson for the government and a costly financial lesson for industry.

However, this type program can provide benefits to our allies and enhance their security, and reward and strengthen the U.S. defense industry. A program of this nature can also serve as a major feature of our security assistance program and national security policy and increase our global influence. To achieve these benefits, it is important not only to understand the errors made in the F-X program but to develop a set of comprehensive long term recommendations for how a program of this nature should be conducted in the future.

IV. RECOMMENDATIONS FOR THE FUTURE

Security assistance arms transfers are an instrument of our national security policy. To be an effective instrument of policy, six general criteria should be satisfied:

- Does the transfer respond appropriately to the actual military threat?
- Will the transfer improve the recipients' ability to participate in a collective defense with the U.S.?
- Will the transfer promote stability and discourage external aggression?
- Can the transfer be absorbed by the recipient without overburdening its resources and also respond to the recipients' actual/perceived needs?
- Is the transfer compatible with the needs of U.S. forces?
- Can the transfer provide corollary economic, political or social development advantages, in addition to the pure military facets?

In addition to these six criteria, it is important to realize three of the main economic benefits that accrue to the U.S. defense-industrial establishment from any arms transfer under the security assistance program:

- expansion/development/enhancement of the defense structural base;
- employment and economic benefits to U.S. workers;
- possible reduction in unit costs for weapons buys for U.S. forces by broadening the overhead base.

Any future program should satisfy the six criteria in order to constructively support our national security policy and also be structured to provide the U.S. economic benefits in the three areas outlined above. In this way, the security assistance program can be leveraged to increase our economic and military power. With these criteria and resultant benefits established, the following set of five specific recommendations are offered for use in a future program designed primarily to generate a majority of its revenue through foreign sales:

- seek consistency in our national security policy as it relates to security assistance;
- accentuate the strong points of the products, enhance its image and avoid negative comparisons with systems in the U.S. force structure;
- incorporate small numbers of the weapons system into the USAF force structure;
- provide tax incentives to U.S. defense industry to encourage assumption of development risk;
- promote multinational regional consortiums to coproduce portions of the weapons system.

These five recommendations, which range from marketing and manufacturing initiatives to taxation changes, will each be outlined.

A. Consistency in Policy

The first requisite for success is consistency in our foreign policy as it pertains to the security assistance program. As was previously discussed, it is difficult for industry to make a long term capital investment and commitment to a program when its underlying policy is tacitly or explicitly changed. However, it would be naive to assume that the international environment will remain so static that a specific arms export policy would remain inviolate over a 4 to 6 year period.

We can gain consistency in our policy for future programs of this nature if the conditions under which an exception to policy would be made were clearly spelled out at the onset. When the long-term F-X program was announced, the U.S. government should have also stated the caveat that we would also continue to respond to the legitimate needs of our allies due to rapid changes in the threat, force balance, or global situation. An appropriate caveat would be to state that the U.S. would transfer the more complex weapons systems designed for U.S. forces, rather than a future export system, when the threat to the requesting nation is clear, imminent,

serious, and can not be met by the export system due to time or capability constraints. The sale of F-16's to Pakistan is one example where the threat suddenly increased and we could not afford to wait for the F-X. A pledge by the U.S. to sell Pakistan the F-X some years in the future was not an appropriate response to the danger caused by the Soviet invasion of Afghanistan. A sudden qualitative jump in North Korean air capability would require a near term response by the U.S.--either by increasing USAF presence or by transferring existing U.S. aircraft to the ROK--rather than wait for the delivery of the F-X. This policy, with the caveat, would also preclude a routine transfer of systems designed for USAF forces at the expense of the export program in the absence of a clear threat, as was done for Venezuela. This type policy will provide the umbrella for the long term development effort while still allowing both the U.S. and its allies the flexibility to appropriately respond to global dynamics.

B. Enhance the Image of the Export System, Stress Its Positive Characteristics, Avoid Negative Comparisons

The second recommendation is marketing oriented. The U.S. Government and industry should drop terms such as "intermediate fighter" which implies a second-rate product and avoid using terms such as "front line" fighter or

"firstline" weapon system when contrasting systems in the U.S. inventory to an export fighter or weapon system. No friend or ally will willingly opt to spend their front line resources to buy a system we cast as less than front-line or first rate. They can and will shop elsewhere for firstline systems.

We must remember these alternatives available to them and stress the positive features such as high reliability, ease of maintenance and low life cycle costs incorporated into a design concept such as the F-X. The export system should be marketed as a multinational system as was done with the F-5E which conveys to a customer that he will be joining a group of nations who share the benefits of a global logistical support network and the operational cross-talk inherent in a broad user base.

C. Incorporate Small Numbers of the Export System into the U.S. Force Structure

The third recommendation is, to some degree, an extension of the issue raised by the last recommendation. Part of the reluctance of nations to purchase the F-X stemmed from the absence of this aircraft from the U.S. force structure. A prime factor in these previous decisions to buy U.S. equipment has been their appreciation that they would be tied into the U.S. logistics and support system and receive full benefits of our integrated

maintenance and training systems. This factor has often given the U.S. an advantage over other nations in foreign sales competitions; however, these advantages are obviated unless the system is incorporated, even if only in small numbers, into the U.S. force structure. This problem could be overcome if the export system, even in very small numbers, was incorporated into the U.S. force structure. A feasible method of incorporating the export fighter into U.S. inventories would be into the Air Force and Navy "aggressor" units. These units fly combat training missions against operational units equipped with first line fighters and use actual Soviet tactics, simulating threat fighters in exercises. The Air Force currently uses F-5E aircraft in this role and the Navy has recently purchased Israeli-made fighters for this role. Since the total number of aggressor aircraft required for both Services would be small (probably less than 75 total) the export fighter could be quickly and inexpensively incorporated into the U.S. inventory in this fashion, as a stimulant for overseas interest.

If the export system was incorporated into U.S. organizations, even for only specialized missions, much of the U.S. costs for equipping these organizations could be recouped under current FMS procedures by using those organizations as the training base for the operational

and maintenance personnel from nations which purchased the export system. These steps could restore the traditional advantages the U.S. has had in FMS competition without disruption to our force structure or combat capability.

D. Provide Tax Incentives for U.S. Defense Industry

The fourth recommendation is aimed at providing a set of incentives for the U.S. defense industry to undertake an export fighter type development program while simultaneously strengthening the U.S. industrial base--one of the traditional benefits of foreign military sales. If private industry is going to assume the risks and costs in an export-oriented development program, as was done in the F-X program, then government policies should be designed to reward those risks while also providing for the traditional economic benefits to U.S. industry that flow from an arms transfer program.

I recommend that the government provide the defense industry with a set of tax incentives in return for participating in a development program. This method has been used successfully by European governments (38:4-10) and the incentives should incorporate the following features:

- The normal investment tax credit could be increased by 50% to a total of 15% for new plant and equipment

installed specifically for the export program. This investment in facilities would later be available to support procurements for U.S. forces.

- An accelerated depreciation schedule should be employed for this new plant and equipment.
- The depreciation schedules should also be based upon replacement costs, as is done for European industry, rather than only recoupment of original costs, as under present U.S. law. This would provide industry a hedge against inflation and further encourage its participation and thereby develop and strengthen our defense industrial base.
- A portion of the profits earned during production of the export weapon system should be declared free of tax provided the profits were reinvested into defense-related plant and equipment within a specified period.

By providing these tax incentives, the government, which assumes no risk in program development, rewards the industrial base for their assumption of risk. The foregone tax revenue would be easily offset by the economic growth resulting from the production program (e.g. jobs, support industries) and from expansion and modernization of our defense industrial base, which would otherwise have to be paid for as part of a U.S. development and production effort.

E. Promote Multinational Regional Consortiums to Co-Produce Portions of the Export System

The fifth recommendation is the most far reaching. If a program such as the F-X is to succeed, it must be viewed by the recipients as more than just another arms sale. It must offer more than the mere transfer of arms

to meet a real or perceived threat or to enhance a nation's identity and prestige. The program must be structured to satisfy multiple needs--economic, political, and social, as well as the obvious military needs. The recipients must perceive advantages other than military to procure a system such as a defensive fighter.

One method to move this program onto a level higher than a pure military one is to offer definite economic, political, and social advantages from the program. There were 42 nations approved by the U.S. for sale of an export fighter. (21:1) These nations may be subdivided into 4 major groups.

- A Southeast Asia group, consisting of the Phillipines, Indonesia, Singapore, Thailand and Malaysia. These nations are all members of the Association of Southeast Asian Nations (ASEAN) a confederation of primary politico-economic nature.
- The Middle East/Persian Gulf group consisting of Bahrain, Jordan, Egypt, the United Arab Emirates, Sudan, Oman, Tunisia, Kuwait, Saudi Arabia.
- A European group comprised of Spain, Portugal, Turkey, Norway, Switzerland, Austria and Norway.
- A Latin American group, consisting of non-Communist aligned nations of Central and South America.

Given these 4 regional groups, there are distinct possibilities of creating regional consortiums to co-produce F-X type aircraft, similar to the F-16 coproduction consortium. Just as a political alliance such as the North Atlantic Council was the foundation for the F-16 consortium, political associations such as ASEAN and the Gulf Cooperation

Council (GCC) could serve as the foundation for regional F-X consortiums.

Each regional group could decide the detailed specifications and exact equipment required and best suited for the region's needs and a consortium formed between members of the regional group and the U.S. contractor to coproduce that particular version of the weapons system. There are two precedential arguments to support this proposal. First, from a business and administrative viewpoint, coproduction agreements have been successfully implemented for both the F-16A and the earlier versions of the F-5. The F-16A was coproduced by the U.S.,Netherlands, Belgium, Norway and Denmark with components produced in 5 countries and final assembly in 3. (27:119) Detailed procedures have evolved to cover currency exchange protection, inflation indexing, distribution of effort and pricing. These conditions are all part of a formal Memorandum of Understanding (MOU) developed for the coproduction effort. Additionally the agreement also specified cost recovery factors for each nation for additional models of F-16A's produced for consortium use or export.

The F-5A and F-5E has also been successfully coproduced in Taiwan, Korea and Switzerland, with Northrop offsetting 50% of their share of the program for the Swiss. (28:24) In summary, the competing export fighter producers

and many of the nations to whom an export fighter could be sold have valuable experience working together in coproduction efforts. The second precedential argument is technical in nature. The technology embedded in the F-20 has, to a large degree, been previously shared, either through transfer or coproduction. The F-20 shares many common components with earlier versions of the F-5 which have been transferred either by sale or coproduction. Figure I illustrates this advanced degree of similarity. (2:42)

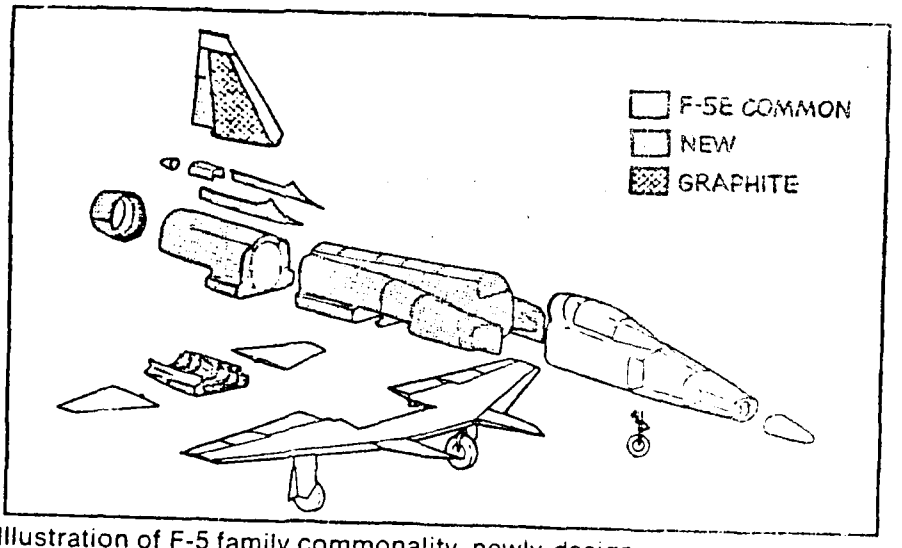

Illustration of F-5 family commonality, newly-designed components and composite materials application.

From these two perspectives, regional coproduction is feasible. In fact, Egypt had voiced strong interest in buying the F-20 on the express condition that coproduction, final assembly, and participation in third country sales (for example, to members of the GCC [illegible]

out. (29:18) In fact, a survey of the Egyptian Airframe and Engine factory at Helwan revealed the capability for F-X final assembly or coproduction. The factory has completed the tooling to coproduce the Franco/German Alpha jet and anticipates possible future F-16 coproduction. (30:61)

The Egyptian site could serve as the focal point of the Middle East efforts with other smaller states sharing in a smaller proportion of component production and intermediate assembly. A similar possibility exists with the ASEAN nations. Singapore, Indonesia and Malaysia have all stepped up their effort to develop airframe production and overhaul facilities. In addition, all ASEAN nations are now equipped with the F-5E and have shown the capability to perform major overhaul on the aircraft which demonstrates a nascent capability to do final assembly. Major overhaul involves teardown and build-up, while final assembly involves build-up only. Each nation could perform certain portions of subassembly (and possibly component manufacture) with one or two nations (e.g. Singapore and Indonesia) performing final assembly.

A similar arrangement could evolve for Europe where the technical proficiency is highest and risk lowest. A Latin American group could also be structured along conceptual lines similar to the Far East and Mid-East groups.

These regional coproduction groups offer the following advantages which track closely with the [illegible] for effective security assistance programs.

1. Military

- All nations of a particular group [illegible] similar equipment promoting economy [illegible] cooperative maintenance, and inter[illegible]
- Avoid introducing the new offensive [illegible] inherent in first line fighters; [illegible] cost defensive capability would be [illegible]
- Help support combined training between [illegible] and regional nations.
- Foster strengthened military ties [illegible] and regional nations.

2. *Political*

- Positive display of U.S. support and [illegible] to our friends/allies.
- Use political associations to strengthen [illegible] omic ties and development, thereby [illegible] in turn these political ties of [illegible]
- Foster a common dialogue on future [illegible] military, economic, and social needs [illegible] encouraging cooperation and trust.

3. Economic

- Nations would realize a savings [illegible] exchange due to local production, with [illegible] sible reduction in total costs, if [illegible] rates differed significantly from [illegible]
- Enhance local industrial base through [illegible] of assembly processes and resultant [illegible] skill development and experience.
- New source of employment for certain [illegible]

- Allows U.S. contractors to benefit from their initial development efforts, rather than lose out to foreign competitors such as the French.

4. Social

- General upward push in living standards due to higher employment, increase in wage rates, improved technical skills and multiplier effect on consumer spending.

While there may be opposition in citing social benefits in an arms transfer--based on the contention that pure social programs could have been alternatively financed--it is important to note that this program is an alternative to buying the more complex systems found in the U.S. force structure with a cost often in excess of the nations' legitimate defense needs. As a result, additional money would be diverted from social needs to satisfy an over-stated perception of the threat or enhance ruling-power prestige.

V. CONCLUSION

These recommendations cover diverse areas but are not all inclusive. What these recommendations attempt is to correct the errors made in the original F-X program while also providing positive incentives to all participants--the U.S. government, foreign customers, and U.S. industry--which would make a future "export-only" development and production program work. If the mistakes of the F-X program are repeated, we will either saddle our friends with systems too complex and expensive for their

needs or we will force them to look elsewhere to other suppliers for their defense needs. These recommendations capitalize on the lessons learned from the F-X program and will support the criteria for our security assistance program while simultaneously increasing the economic, political, and military-industrial strength of the U.S.

APPENDIX
AIRCRAFT COMPARISON[1]

	F-5E	F-5G	F-16/79	F-16
Empty Weight	9,683	11,100	17,000	15,500
Maximum External Load	7,000	7,000	15,200	20,450
Maximum Take-Off Weight	24,676	26,140	36,000	35,950
Engines/Thrust(lbs)	2/14,000(est)	2/17,000	1/19,000	1/24,000
Thrust/Weight Ratio	.65	.90	.75	1.1
Service Ceiling(ft)	52,000	55,000	over 50,000	50,000
Combat Radius (Naut. Mi.)	120-650	300-360	approx 400	500
Max Rate of Climb(ft/min)	34,500	50,300	--	--
Max Speed (Mach)	1.6	2.1	2.0	2.0+
Armament				
500 lb. Bomb	14	7	6	40
Air-Air Missiles	2	6	4	4
20 mm cannon	Yes	Yes	Yes	Yes

[1]Source: Jane's All the World's Aircraft, 1981-2, Janes' Publishing Co., Ltd., London, UK

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